

CIDRW System Installation Instructions

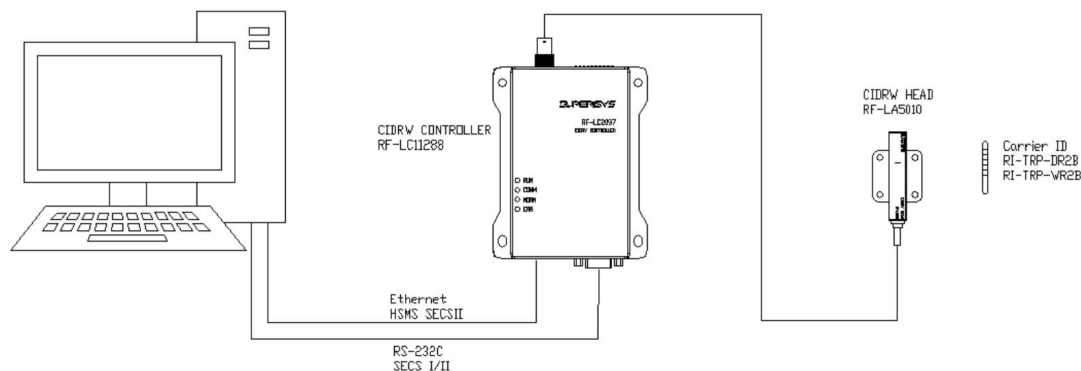
1. Product Overview

Superisys CIDRWThe system is a special RFID product for the semiconductor application industry, which consists of two parts:

	Model
CIDRW Controller	RF-LC12097
CIDRW read head	RF-LA5010

The main technical features of the system are as follows:

- 134.2K frequency, support ISO 11784, ISO 11785 protocol;
- Supports RI-TRP-DR2B, RI-TRP-WR2B RF tags manufactured by Texas Instruments;
- Support RS232, RS485, Ethernet communication;
- SUPPORTS SECS PROTOCOL, MODBUS RTU AND MODBUS TCP PROTOCOL;



The system is subject to the following SEMI standards:

- SEMI E99 Carrier ID read/write standard
- SEMI E37 High-speed SECS Messaging Service Common Service (HSMS)
- SEMI E5 Device Communication Standard 2 Message Content (SECS II)
- SEMI E4 Device Communication Standard 1 Message Content (SECS I)

1. Hardware description

2. 2.1 CIDRW Controller

2.1.1 Technical parameters

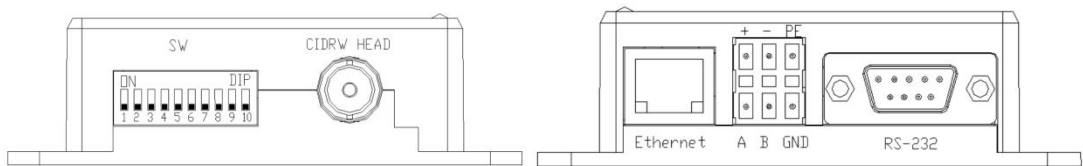
The technical parameters of RF-LC12097 CIDRW control are as follows:

Specifications	Product model	RF-LC12097
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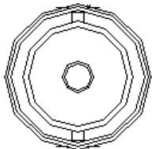
	Operating frequency	134.2Khz
	Working mode	HDX
	Wireless protocols	ISO 11784、ISO 11785
	Supply voltage	9~30VDC
	Average current	<0.1A@24VDC
	indicator light	4 LED indicators
	Number of antenna ports	1 pc
	Antenna interface type	BNC female
	Communication interfaces	Ethernet, RS-485, RS-232
	Communication protocols	SECS, MODBUS TCP, MODBUS RTU
Physical parameters	Dimensions	120*97*27.5mm
	Fixed type	4 x M5 screw holes
	sheating material	Aluminum alloy
	Housing color	grey
Application environment	Operating temperature	-25℃ ~ +70℃
	Storage temperature	-40℃ ~ +85℃
	humidity	5%~95%RH (no condensation)
	Waterproof and dustproof rating	IP20, EN 60529
	Vibration-resistant	2 mm (f= 5...29.5 Hz) , EN 60068-2-6 7 gn (f= 29.5...150 Hz) , EN 60068-2-6
	Electrostatic discharge immunity ESD	IEC 61000-4-2
Testing and certification	RoHS Directive	2011/65/EU, 2015/863/EU

2.1.2 Product interface

The RF-LC12097 CIDRW controller consists of a CIDRW read head interface, SW dial code, Ethernet port, RS232 interface, power supply and RS485 interface.



CIDRW read head interface

	description
CIDRW HEAD 	The CIDRW HEAD interface uses a BNC female connector for connecting CIDRW read heads.

SW DIP switch port

	description				
SW ON DIP 1 2 3 4 5 6 7 8 9 10	SW DIP switch port Used to configure CIDRW controllers				
	1	RS485 termination resistor, resistance value 120Ω ON: Connect OFF: No connection [default]			
	2-6	Device address, used for SECS I. Device address = DIP + 1 The default DIP switch value is 0 and the device address is 1			
	7-8	Baud rate for SECS I			
		DIP value	baud rate	DIP value	baud rate
		0 [default]	9600	1	4800
	2	19200	3	38400	
9	Test mode ON: Enables the test mode. Test mode RUN light flashes. In test mode, the controller will automatically detect if there is a CID or not, and the detection status will be displayed via the NORM light				
10	Reserved, keep the OFF state				

Note ① The DIP switch configuration takes effect only after a power off and restart;

Note ① The DIP switch with the lowest number corresponds to the device address and baud rate;

Ethernet port

The Ethernet port uses a standard RJ45 female connector, which supports 10/100M self-adaptation and does not support automatic flipping. The default Ethernet IP address

is 192.168.0.10.

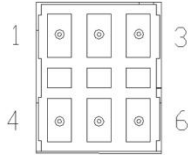
RS232 interface

The RS232 interface uses a DB9 male header, which is defined as follows:

	pins	definition
	2	RS232-RX
	3	RS232-TX
	5	GND
	other	NC

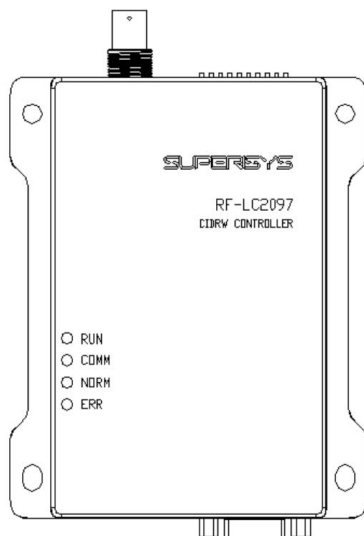
Power supply and RS485 interface

The power supply and RS485 ports use 2 x 3P terminals with a distance of 3.81mm:

	pins	definition	pins	definition
	1	24V	4	D+
	2	0V	5	D-
	3	PE	6	GND

2.1.3 LED Definition

The RF-LC12097 CIDRW controller has four leds, namely RUN, COMM, NROM and ERR. The distribution of leds is shown in the figure below.



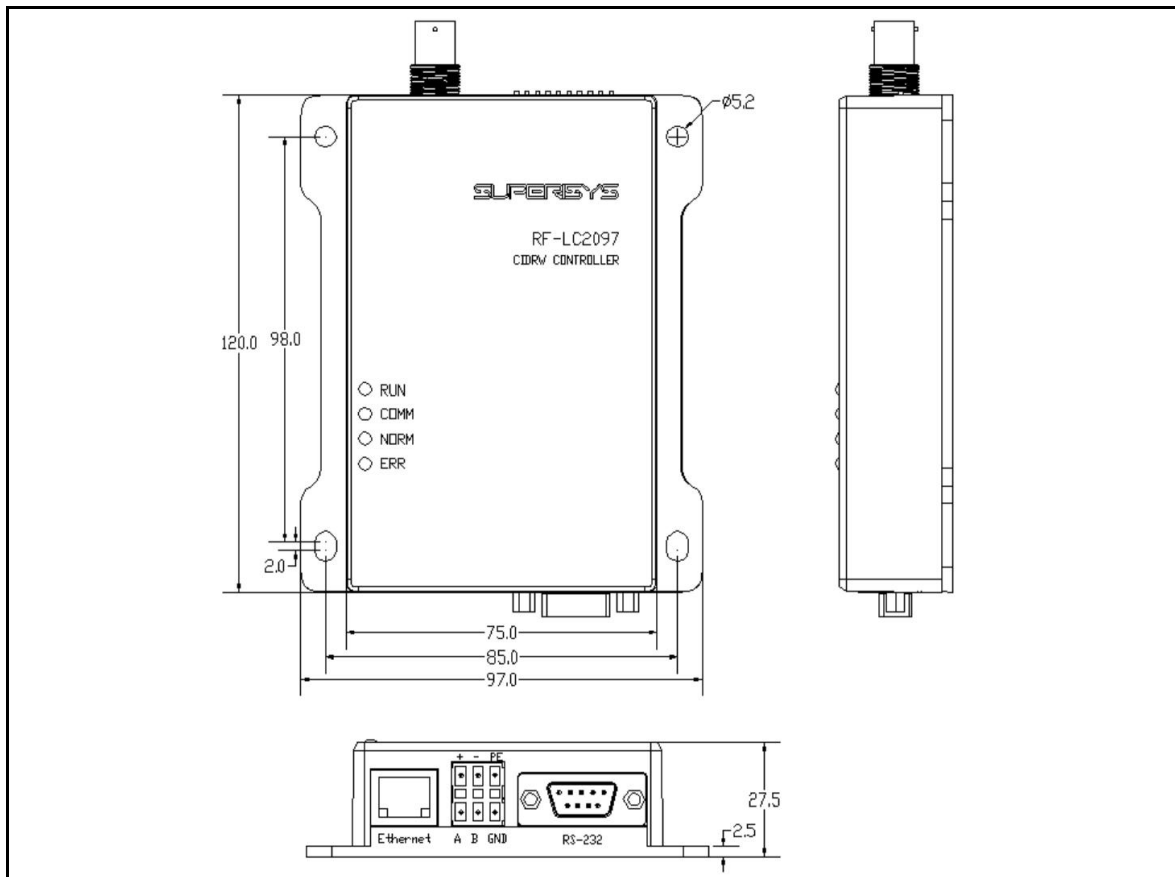
The specific definition of each LED lamp is as follows:

name	color	state	description
RUN	Green-red two-color light ●●	Solid on ●	The system is powered normally and the system is in working mode
		Flashing green ●●●●●	The system is in test mode with a blinking frequency of 1Hz
		Solid on ●	system exception
		Long red flash 1 time ●■●	The RF module is abnormal. The indicator blinks red for 1000ms each time
		Long red flash 2 times ●■■■●	The network module is abnormal. The indicator is steady red for 1000ms each time
		Flash red 2 times ●●●●●	If the MAC address is not initialized, the indicator blinks red for 100ms each time
		Extinguish ●	The system is not powered on or the power supply is abnormal
COMM	green light ●	Solid on ●	A TCP connection has been established between the host and the reader. Procedure
		Flashing ●●●●●	Communicating, currently using TCP

		Flashing ● ● ●	Communicating, currently using RS232 or RS485
		Extinguish ●	connectionless
NORM	green light ●	flashing ● ● ●	Instruction executed successfully
		extinguish ●	Command execution failed or no instruction was executed
ERR	red light ●	Flashing ● ● ●	Instruction execution failure
		Extinguish ●	The command is executed successfully or no command is executed

2.1.4 mounting dimension

The RF-LC12097 is 120*97*27.5mm in size and includes 4 M5 mounting holes, as shown below.



2.2 CIDRW read head

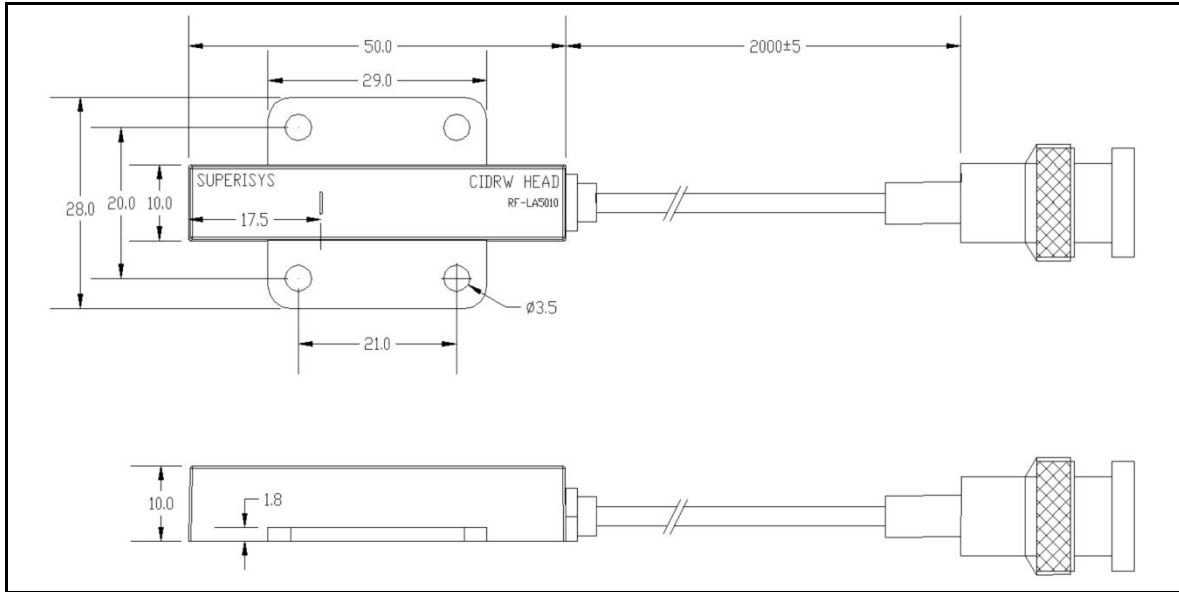
2.1.1 technical specification

The technical parameters of the RF-LA5010 CIDRW read head are as follows:

Specifications	Product model	RF- LA5010
	Operating frequency	134.2Khz
	Antenna interface type	BNC male
	Cable type	Coaxial wire
	Cable length	2 meters
	Dimensions	50*28*10mm
	Fixed type	4 x M3 screw holes
	sheating material	PC+ABS
	Shell color	black
Application environment	Operating temperature	-25°C ~ +70°C
	Storage temperature	-25°C ~ +85°C
	humidity	5%~95%RH (no condensation)
	Waterproof and dustproof rating	IP67, EN 60529
	Vibration-resistant	2 mm (f= 5...29.5 Hz) , EN 60068-2-6 7 gn (f= 29.5...150 Hz) , EN 60068-2-6
	RoHS Directive	2011/65/EU, 2015/863/EU

2.2.2Installation dimensions

The RF-LA5010 is 120*97*27.5mm with 4 M3 mounting holes, as shown below.



2.3 Installation precautions

1、 About the installation location



Do not install it near devices with high heat dissipation, such as heaters, transformers, and large-capacity resistors



Do not install it near devices with severe electromagnetic interference, such as large motors, transformers, transceivers, frequency converters, and switching power supplies.

This product uses a frequency band of 134.2KHz to communicate with RF. Electrical waves (noise) generated by transceivers, motors, frequency converters, switching power supplies, etc., may affect the communication between the product and the RF label. Having these devices around may affect the communication between the product and the RF label or damage the RF label.

When using this product near these devices, please confirm the effects before using it.

2、 About power and wiring



Do not use AC power. Otherwise, there is a risk of rupture, which seriously affects the safety of people and equipment.



Use a current source with limited power to operate the device, that is,

the power supply must have overvoltage and overcurrent protection. To prevent the power failure of this equipment, affecting the safety of other equipment;



Avoid incorrect wiring. Otherwise, there is the danger of cracking and burning out. Personal and device safety may be affected.



Do not bend the cable within a radius of 40mm. Otherwise, there is the danger of breaking the line.

3、 other



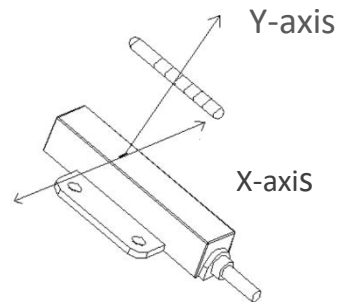
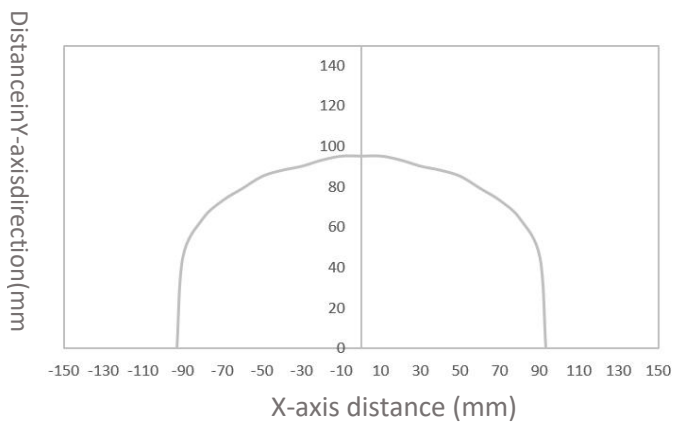
If you feel that there is an abnormality in the product, stop using it immediately and contact our sales representative after disconnecting the power supply.

1. Appendix

Read Range (RI-TRP-DR2B-40)

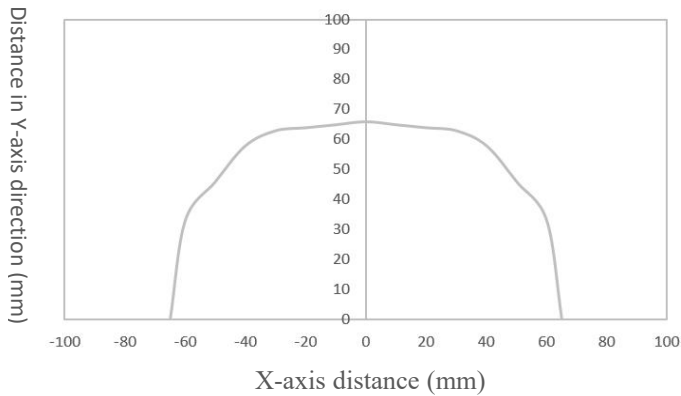
The following test data is obtained from the laboratory environment, and the installation environment of the CIDRW header in the actual application will have a certain impact on the reading range, please refer to the test data in the actual application environment。

Parallel installation: Read



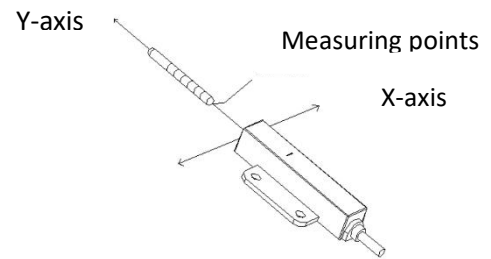
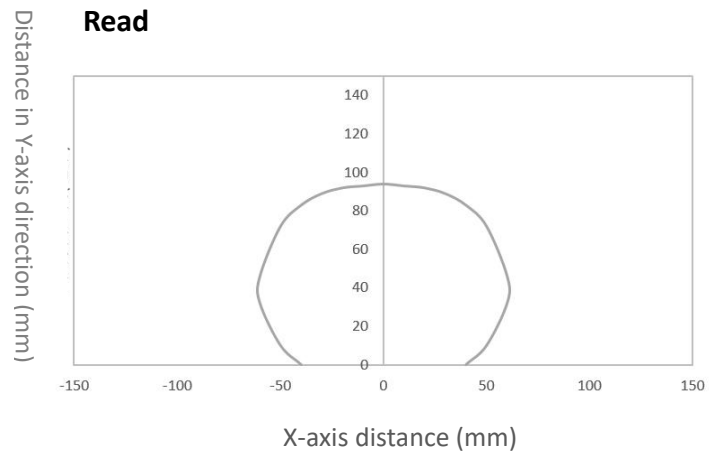
Note: Due to the number of test samples, there will be some differences with the actual reading range shape。

write

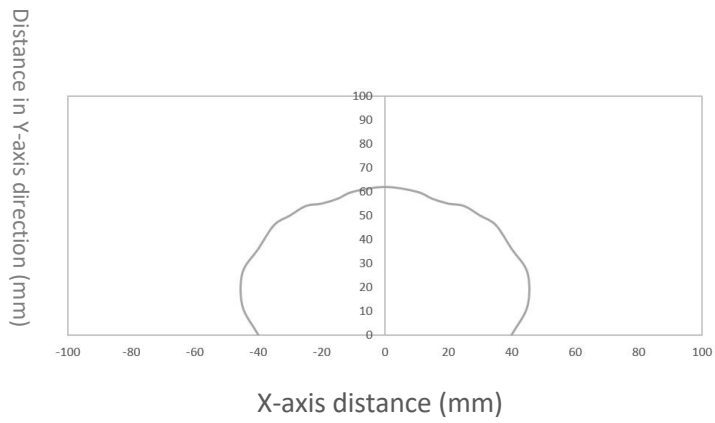


Coaxial mounting:

Read

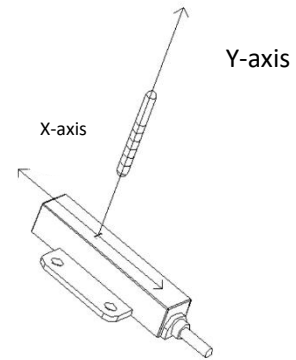
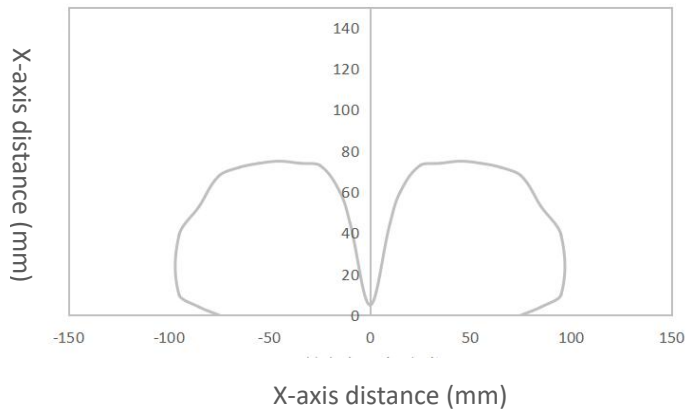


write

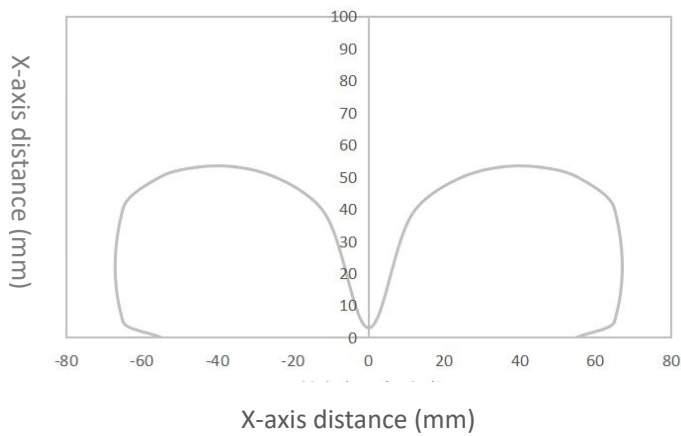


vertical installation:

Read



write



When using vertical installation, the antenna center of the CID and CIDRW head in the X-axis direction is offset distance A, the recommended distance A is set at about 3.5CM。

